



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

MEMORANDUM TO: Project Engineers  
Project Design Engineers

FROM: G. R. Perfetti, PE  
State Structures Engineer

DATE: December 12, 2011

SUBJECT: FOUNDATION CONDITIONING MATERIAL FOR BOX  
CULVERTS

In order to eliminate or reduce overruns of foundation conditioning material for box culverts, the Construction Unit has requested the method for computing the quantity of foundation conditioning material be revised. Use the following guidelines.

Box culverts are founded on a 12 inch (300 mm) thick pad of foundation conditioning material (FCM). The width of the FCM is the total width of the culvert plus 4'-0" (1.22m). Compute the quantity of FCM for the box culvert, but do not include a FCM quantity for standard turned back wings. Use 1.904 tons/yd<sup>3</sup> (2.26 metric tons/m<sup>3</sup>) for the unit weight of FCM to compute the total weight of FCM. Include this material in the Bill of Material on a ton (metric ton) basis for "Foundation Conditioning Material, Box Culvert" rounded to the nearest ton.

This policy is effective with the March 2012 letting. The online version of the Design Manual will be revised at a later date.

GRP/GM/

cc: T. K. Koch, PE  
R. A. Raynor, Jr., PE  
E. B. Nelson, PE  
H. Black, PE  
D. S. Chang, PE  
R. A. Hancock, PE, Attn: M. S. Robinson, PE  
R. D. Rochelle, PE  
E. Dubin, PE, FHWA

**MAILING ADDRESS:**  
NC DEPARTMENT OF TRANSPORTATION  
STRUCTURES MANAGEMENT UNIT  
1581 MAIL SERVICE CENTER  
RALEIGH NC 27699-1581

TELEPHONE: 919-707-6400  
FAX: 919-250-4082

WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

**LOCATION:**  
CENTURY CENTER COMPLEX  
BUILDING A  
1000 BIRCH RIDGE DRIVE  
RALEIGH NC 27610